Oxybasis chenopodioides (L.) S. Fuentes, Uotila & Borsch (*Chenopodium chenopodioides* (L.) Aellen) (Saltmarsh Goosefoot)

Draft account.

vc 15 and 16

Rarity / scarcity status:

Saltmarsh Goosefoot is nationally **scarce**, being largely restricted to Essex, so that the Thames estuary represents its core distribution. As it has diminished in its East Anglian range and is a characteristic species of good quality coastal grazing marsh and saltmarsh, it is perhaps surprising that its conservation status in England and in Great Britain as a whole is one of 'Least Concern', but this presumably reflects a view regarding the stability of its populations. In Kent, it is not common, but is locally frequent where it does occur, and does not warrant designation for rarity or scarcity.

Account:

The first Kent find of *Oxybasis chenopodioides* appears to have been by J.T.B. Syme in 1852 at Gravesend[18]. It may be conjectured that it in the distant past it may have been a feature of the tidal marshes up the Thames to London, given that its pollen has been identified in the excavation of Roman material at Finsbury Circus. The pollen may not have originated in situ, of course, and could have arrived by various means, even (per Francis Rose, perhaps somewhat fancifully, *in litt.)* with oysters, gathered by the Romans off north Kent and transported! Marshall (in the Victoria History of the County of Kent, 1908) stated that it "only grows in the Thames salt-marshes and near Sandwich"; and the assessment of Hanbury and Marshall (1899) was that it was rather rare. There are specimens from the Pegwell Bay area near Sandwich gathered from the 1850s to the 1870s, but this does not seem to have been a locality which has persisted. Thereafter, the main concentration of records appears to have been from Shorne to Grain, although Francis Rose in the 1940s to the 1960s took the distribution eastwards to the Swale. There was also an odd eastern outlier in a brackish dike north of Stuart, St Nicholas at Wade.

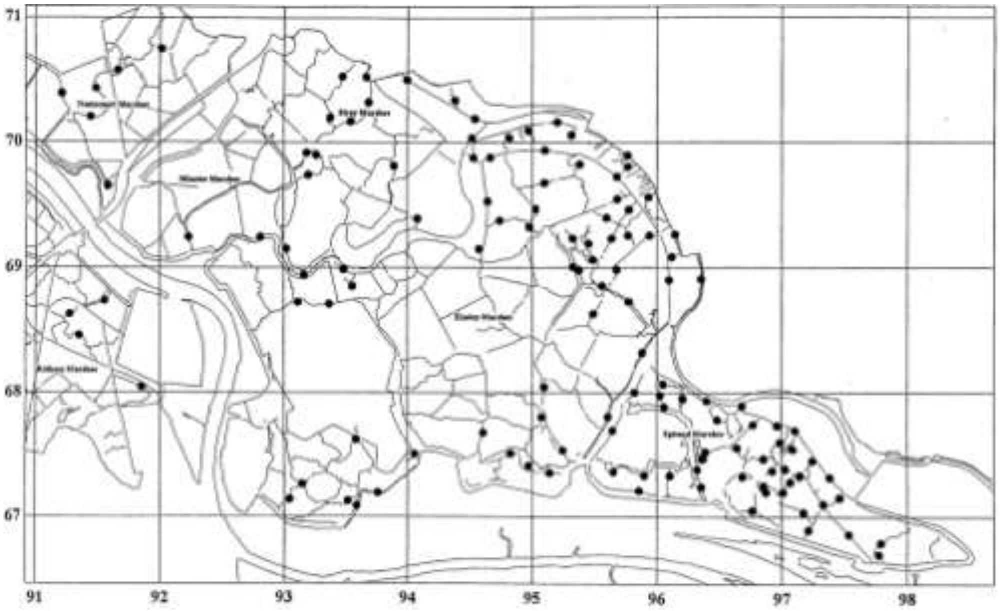
Uplees Marshes. Photo by Lliam Rooney, 5 October 2010

Philp (1982) for the period 1971-80 gave 21 tetrad records in the administrative county, almost all spanning the same part of the north Kent coast, and with concentrations at Grain and in south Sheppey. These records occur with greater continuity along the coast in Philp (2010), where 29 tetrad records are mapped. It is likely that the increase in records does not reflect a population increase, but rather relates to targeted recording. (The same is probably due of the coastal populations of *Oxybasis glauca* – see separate account.) Nevertheless, there were during the survey period (1991-2005) further records not mapped in Philp (2010), arising in the course of a 1995 survey by Phil Williams[19]. of the ditches of the North Kent Marshes SSSIs, the first such comprehensive survey, and including the South Thames Estuary & Marshes SSSI, the Medway Estuary & Marshes SSSI and the Swale SSSI which together carry a drainage system of over 2,000 ditches. This survey covered *Oxybasis chenopodioides* records in 47 monads, which equate to 14 tetrads additional to the 29 tetrads given in Philp (2010). The extent of these records is such as to highlight that subsequent general recording can only be regarded as sampling. By way of illustration of the abundance of the species revealed by full survey in 1995, the accompanying map, reproduced with kind permission of Phil Williams and Natural England, shows sites recorded in the south Sheppey marshes bounded by the old counter wall.

---

[18] Mentioned in the Botanical Exchange Club Curator's Report for 1863 (1864), reviewed in Journal of Botany (1864).

[19] Williams, P. (1996). *A survey of the ditch flora in the North Kent Marshes SSSIs, 1995*. English Nature Research reports no. 167.



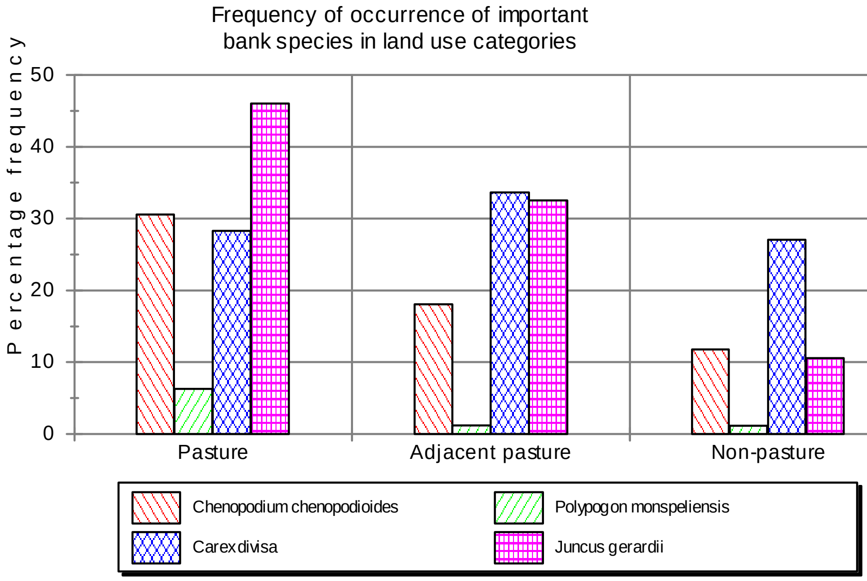
Neatcourt, Minster, Stray, Elmley and Spitend Marshes, 1995

There are occasional anomalies of Kent finds away from the Thames / Swale estuaries. Francis Rose recorded the species north west of Greatstone, in saltmarsh with *Bolboschoenus maritimus*, the site of the old Rother estuary. Both Philp (1982) and (2010) give an inland Romney Marsh record at TQ96T, which represents a population at Fairfield with records from 1962 (K.D. Rowlands, near the church, TQ 966 265) onwards. (The Fairfield site is 8 km inland, but the ditches are saline, which may be associated with the unusual thinness at this point of the layer of silty clay over peat, and with the possibility of the peat substrate holding salt from historic marine transgressions[20].) There have also been sightings (2013, 2018) by the A249 near Bobbing, presumably brought down from the estuary, but least 4km from any estuarial habitat. However, these are very much exceptions to the Thames / Swale focus of this species.

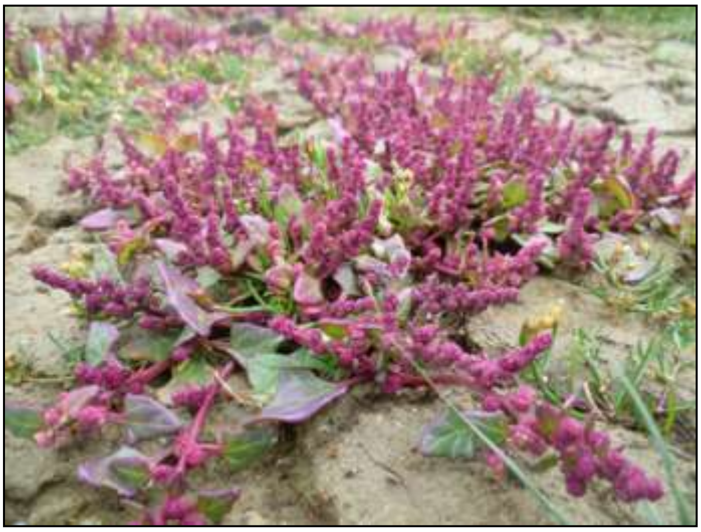
Saltmarsh Goosefoot is annual of brackish mud where exposed in late summer at the edge of coastal dikes or ditches, or in depressions in grazing marshes. Germination appears to require emergence of the mud from winter inundation (the water levels normally falling progressively through summer, drying out some ditches and increasing their salinity), so that the mud with its seed-bank is exposed to light and air. This may not be until July, so that the plant does not always reach full vigour until autumn. In a wet summer its numbers may be considerably reduced. Cattle or sheep stocking helps keep the mud open, trampling down the edges of ditches, and (observed by Rosemary FitzGerald at Swale NNR in 1986) creating through hoof-prints ephemeral habitats in which small plants may appear. The effect of poached ditch margins is borne out by Williams (1995) through an assessment of the frequency of the species in North Kent ditches adjoining different land uses. Saltmarsh Goosefoot was found to be most frequent in ditches adjoining pasture on both sides; less frequent in ditches adjoining pasture on one side; and least frequent in ditches adjoining non-pasture uses (see table below, reproduced with kind permission of Phil Williams and Natural England, in which the plant is given under its former name of *Chenopodium chenopodioides*). Population fluctuations may relate to the extent of disturbance (not just by cattle, but, including the excavation of mud when ditches are cleaned), or to the timing of mud drying out and warming up.

---

[20] Soil cross-section given in R.D. Green (1968). *Soils of Romney Marsh*, Agricultural research Council, Harpenden, pp. 32-33.



The more brackish ditches in the grazing marshes can be well populated by *Oxybasis chenopodioides*. Williams (1995) found it occurring in over 40% of the ditches in the Neatscourt to Spitend Marshes, in nearly 25% of the ditches in the Swale NNR and Capel Fleet (and along the entire length of Capel Fleet). Associated species are given by FitzGerald (1994)[21]and are mostly annuals reflecting the salinity of Saltmarsh Goosefoot's favoured habitats, including *Oxybasis rubra, Parapholis strigosa, Salicornia* spp. and *Suaeda maritima*; perennials include *Lysimachia maritima, Juncus gerardii* and *Spergularia* spp. At Shornmead fort (which Wolley Dod in 1893 supposed could have been Syme's original 1852 find location) it was found in October 1986 (Rosemary FitzGerald and Alan Leslie) in proximity to *Rumex palustris*, which also favours trampled ditch margins. At Grain, south of the A228 inside the sea wall of Colemouth Creek, it was in the same month recorded as associated with abundant *Polypogon monspeliensis*, which has similar habitat requirements, and was so plentiful that the course of the dried-up shallow fleets could be traced by its characteristic autumn red.



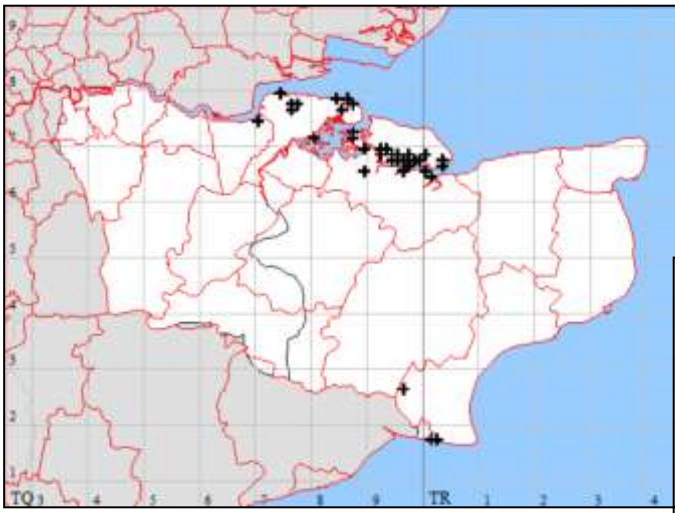
Fairfield. Photo by Owen Leyshon, September 2013

The frequent co-presence of *O. rubra* necessitates distinguishing its dwarf semi-prostrate forms from Saltmarsh Goosefoot. Typical Saltmarsh Goosefoot is more or less prostrate, red (at least on stem and leaf undersides) and with fleshy leaves, rounded-triangular and hardly (if at all) toothed. *O. rubra* is generally more erect, but often also red and with less fleshy leaves more toothed. The tepals of the lateral fruits in each cluster are in *O. chenopodioides* fused fully so as to hide the seed; in *O. rubra* they are fused half-way, so that the seed is visible.

---

[21] *Chenopodium chenopodioides*, in Scarce Plants in Britain (1994), ed. A. Stewart, D.A. Pearman and C.D. Preston, JNCC, Peterborough.

As this species is not uncommon in Kent, the distributional data maintained in this register will be at 1km square (monad) level. This will entail recording at a finer scale than the tetrads given in Philp (2010), from which the accompanying 1991-2005 distribution map is taken (with kind permission of the late Eric Philp and the Kent Field Club). Records for 2010-20 have picked up well the concentration around the Swale and have added a site at Dungeness (although Philp (1982) indicates that more occurrences were known there in the past); but have not yet reached the same level of coverage for the Hoo peninsula, nor generally (25 tetrads in comparison with 29 in the 1991-2005 survey). Not every year is suitable for this species: weather conditions in 2012 were not conducive, as summer and autumn rainfall kept water levels in ditches above where Saltmarsh Goosefoot would normally be growing.



Oxybasis chenopodioides
(Saltmarsh Goosefoot) 2010-20

Oxybasis chenopodioides
(Saltmarsh Goosefoot) 1991-2005